Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1. (previously presented) A method to determine a physical connectivity configuration of at least a portion of a network when the physical connectivity configuration is unknown, the method comprising:

receiving status information, without using prior knowledge of port interconnections, relating to nodes in the portion of the network whose unknown physical connectivity configuration is to be determined;

determining, for the nodes, respective labels that indicate one or more virtual connections traversing the nodes based on the status information;

identifying at least one link between a subset of the nodes based on the respective labels; and

determining the physical connectivity configuration of the portion of the network based on the at least one link.

Claim 2. (original) The method of claim 1, wherein receiving status information comprises: receiving management information base parameters from the nodes.

Claim 3. (original) The method of claim 2, wherein receiving the management information base parameters comprises receiving a virtual path identifier for each of the one or more virtual connections.

Claim 4. (original) The method of claim 2, wherein receiving the management information base parameters comprises receiving virtual channel identifier information for each of the one or more virtual connections.

Claim 5. (original) The method of claim 1, wherein determining respective labels that indicate one or more virtual connections traversing the nodes comprises determining one or more identifiers for each of the one or more virtual connections.

Claim 6. (previously presented) The method of claim 5, wherein identifying at least one link between a subset of the nodes comprises determining the subset of nodes having the same one or more identifiers.

Claim 7. (original) The method of claim 5, wherein determining one or more identifiers comprises determining a virtual path identifier for each of the one or more virtual connections.

Claim 8. (previously presented) The method of claim 5, wherein determining one or more identifiers comprises determining a virtual channel identifier for each of the one or more virtual connections.

Claim 9. (original) The method of claim 1, wherein determining respective labels that indicate one or more virtual connections traversing the nodes comprises:

determining a number of the virtual connections traversing the nodes; and

determining respective cardinalities of the nodes based on the number of the virtual connections.

Claim 10. (original) The method of claim 9, wherein determining at least one link between the subset of the nodes comprises determining the subset of nodes having the same cardinality.

Claim 11. (currently amended) A method to determine a physical connectivity configuration of at least a portion of a network when the physical connectivity configuration is unknown, the method comprising:

receiving status information, without using prior knowledge of port interconnections, relating to nodes in the portion of the network whose unknown physical connectivity configuration is to be determined;

determining, for the nodes, respective labels that indicate one or more virtual connections traversing the nodes based on the status information comprising determining a number of the virtual connections traversing the nodes and determining respective cardinalities of the nodes based on the number of the virtual connections;

identifying at least one link between a subset of the nodes based on the respective labels comprising determining the subset of nodes having the same cardinality; ~~and~~

determining the physical connectivity configuration of the portion of the network based on the at least one link; and

~~The method of claim 10, further comprising~~ receiving additional status information when the subset of nodes exceeds a threshold number of nodes.

Claim 12. (original) The method of claim 11, wherein the threshold number of nodes is 2.

Claim 13. (previously presented) An apparatus to determine a physical connectivity configuration of at least a portion of a network when the physical connectivity configuration is unknown, comprising:

means for receiving, without use of prior knowledge of port interconnections, status information relating to nodes in at least a portion of a network whose unknown physical connectivity configuration is to be determined;

means for determining respective labels for the nodes that indicate one or more virtual connections traversing the nodes based on the status information;

means for identifying at least one link between a subset of the nodes based on the respective labels; and

means for determining a physical connectivity configuration of the portion of the network based on the at least one link.

Claim 14. (previously presented) The apparatus of claim 13, wherein the means for receiving status information comprises:

means for receiving management information base parameters relating to the nodes.

Claim 15. (previously presented) The apparatus of claim 14, wherein the means for receiving the management information base parameters comprises means for receiving a virtual path identifier for each of the one or more virtual connections.

Claim 16. (original) The apparatus of claim 14, wherein the means for receiving the management information base parameters comprises means for receiving virtual channel identifier information for each of the one or more virtual connections.

Claim 17. (original) The apparatus of claim 13, wherein the means for determining respective labels that indicate one or more virtual connections traversing the nodes comprises means for determining one or more identifiers for each of the one or more virtual connections.

Claim 18. (previously presented) The apparatus of claim 17, wherein the means for identifying at least one link between a subset of the nodes comprises means for determining the subset of nodes having the same one or more identifiers.

Claim 19. (original) The apparatus of claim 17, wherein the means for determining one or more identifiers comprises means for determining a virtual path identifier for each of the one or more virtual connections.

Claim 20. (original) The apparatus of claim 17, wherein the means for determining one or more identifiers comprises means for determining a virtual channel identifier for each of the one or more virtual connections.

Claim 21. (original) The apparatus of claim 13, wherein the means for determining respective labels that indicate one or more virtual connections traversing the nodes comprises:

means for determining a number of the virtual connections traversing the nodes; and

means for determining respective cardinalities of the nodes based on the number of the virtual connections.

Claim 22. (original) The apparatus of claim 21, wherein the means for determining at least one link between the subset of the nodes comprises means for determining the subset of nodes having the same cardinality.

Claim 23. (currently amended) An apparatus to determine a physical connectivity configuration of at least a portion of a network when the physical connectivity configuration is unknown, comprising:

means for receiving, without use of prior knowledge of port interconnections, status information relating to nodes in at least a portion of a network whose unknown physical connectivity configuration is to be determined;

means for determining respective labels for the nodes that indicate one or more virtual connections traversing the nodes based on the status information comprising means for determining a number of the virtual connections

traversing the nodes and means for determining respective cardinalities of the nodes based on the number of the virtual connections;

means for identifying at least one link between a subset of the nodes based on the respective labels comprising means for determining the subset of nodes having the same cardinality; ~~and~~

means for determining a physical connectivity configuration of the portion of the network based on the at least one link; and

~~The apparatus of claim 22, further comprising~~ means for receiving additional status information when the subset of nodes exceeds a threshold number of nodes.

Claim 24. (original) The apparatus of claim 23, wherein the threshold number of nodes is 2.

Claim 25. (previously presented) A method for determining a physical connectivity configuration of a node in a network, the method comprising the steps of:

receiving, without using prior knowledge of port interconnections, status information relating to a node in a network and at least one additional node in the network;

determining respective labels that indicate one or more virtual connections traversing the node based on the status information;

identifying at least one link between the node and the at least one additional node based on the respective labels; and

determining a physical connectivity configuration of the node based on the at least one link.

Claim 26. (previously presented) An apparatus for determining a physical connectivity configuration of a node in a network, comprising:

means for receiving, without use of prior knowledge of port interconnections, status information relating to a node in a network and at least one additional node in the network;

means for determining respective labels that indicate one or more virtual connections traversing the node based on the status information;

means for identifying at least one link between the node and the at least one additional node based on the respective labels; and

means for determining a physical connectivity configuration of the node based on the at least one link.